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REMARKS

Claims 1-24 are pending in the present application. Claims 12 and 14 have been amended. No new matter has been added. Applicants respectfully request reconsideration of the claims in view of the following remarks.

Claims 12-24 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. However, claims 12 and 14 have been amended to correct typographical errors and are no longer indefinite.

Claims 1-24 were again rejected under 35 U.S.C. § 103(a) as being unpatentable over the August 1987 article "Cleaning Techniques for Wafer Surfaces," published in Semiconductor International in combination with U.S. Patent No. 6,944,097 B1 to Ferrell.

To make the present rejection, the Examiner simply ignored portions of the claim limitations added in the response dated December 4, 2006. In addition, the Examiner also ignored the arguments Applicants presented in the December 4, 2006 response that dealt with and explained the very limitations ignored by the Examiner.

More specifically, the independent claims require "an immiscible or partly immiscible additive" to be introduced to form heterogeneous nucleation sites. The term heterogeneous means dissimilar or different nucleation sites. At the last sentence on page 8 of the December 4, 2006, response, Applicants explain the immiscible additive is not a surfactant, yet the Examiner's rejection states "and introducing surfactant to the cleaning solution" as though adding a surfactant is the same as adding the immiscible additive. The use of a surfactant is included as another embodiment and claimed by dependent claim 11.

A surfactant reduces the surface tension of a liquid, or cleaning solution, whereas an immiscible additive is a material that will not mix with the cleaning solution. The inability of the

cleaning solution and the immiscible additive to mix, results in an increased number of nucleation sites (i.e., heterogeneous sites). A surfactant and an immiscible additive simply are not the same, nor does the use of a surfactant in the reference make obvious the use of an immiscible additive as taught by the Applicants.

The Examiner could not, of course, effectively argue that introducing a surfactant was the same as introducing an immiscible additive, so instead simply stated a surfactant was added as though it would be considered the same as an immiscible additive. Also, of course, the Examiner could not properly argue that since the referenced article disclosed introducing a surfactant into the cleaning solution rather than an immiscible additive, it would in any event be obvious to introduce an immiscible additive to increase the number of nucleation sites. Instead, the Examiner simply ignored both the clear language and the arguments of December 4, 2006.

The Examiner also argues that the reference "discloses megasonic waves, the cleaning solution, and the frequency as claimed." Of course, simply teaching the independent elements of the method claim does not automatically teach the method or process, unless the elements are used for the same purpose and substantially in the same order. For example, the reference article actually teaches away from the invention by teaching that the "higher frequency used in megasonics results in a high pressure wave being set up in the solution *rather than hubbles*." Thus, the reference article *does not* teach that the large increase in the number of nucleation sites resulting from the immiscible additive forming heterogeneous sites results in additional bubbles as taught and claimed by the present invention.

In the rejection, the Examiner concluded without any basis that the cavitations in the cleaning solution as taught by the references and that result from the ultrasonic energy will inherently produce heterogeneous nucleation. However, this position of the Examiner is not

supported by the reference article and is incorrect. The article does teach the typical cavitation bubbles in the cleaning solution when ultrasonic energy is used, but also teaches that *waves, not bubbles*, result from the use of megasonic energy. Thus, there is no teaching of the formation of many smaller heterogeneous nucleation sites resulting from an immiscible additive in addition to the normal or typical nucleation sites. The present invention includes the immiscible additive to form the heterogeneous nucleation sites. The reference does not disclose anything that will form an increased number of nucleation sites, much less heterogeneous nucleation sites. It is also clear that Ferrell does not overcome the above-discussed shortcomings of the reference article, and, thus, it is respectfully submitted that the claims are in condition for allowance.

In view of the above, Applicants respectfully submit that this response complies with 37 C.F.R. § 1.116 and should therefore be entered, and with said entry that the application is in condition for allowance. No new matter has been added by this amendment. No fee is believed due in connection with this filing. However, in the event that there are any fees due, please charge the same, or credit any overpayment, to Deposit Account No. 50-1065. If the Examiner has any questions or other correspondence regarding this application, Applicants request that the Examiner contact Applicants' Attorney at the below listed telephone number and address.

Respectfully submitted,

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Date

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